

IN THE CLAIMS:

Please AMEND claims 1, 2, 4, 7, 9, 10, 12 and 13, as follows. For the Examiner's convenience, all claims currently pending have been reproduced below.

1. (Currently Amended) A magnetic guiding apparatus for guiding a moving member along a length of a sliding member by attracting a target disposed along the length of the sliding member by electromagnets provided on the moving member, said apparatus comprising:

a plurality of magnetic-flux detection means, on the guided moving member, for detecting a magnetic flux along the length of the target during movement of the moving member along the length of the sliding member;

position measuring means for measuring a position of said plurality of magnetic-flux detection means on the guided moving member along the length of the sliding member;

detection means for detecting a position of the magnetic flux peak along the length of the target, based on output of said plurality of magnetic-flux detection means and said position measuring means; and

demagnetization means for performing demagnetization at the detected position of the magnetic flux peak.

2. (Currently Amended) A magnetic guiding apparatus according to Claim ~~claim~~ claim 1, further comprising storing means for storing the magnetic flux in the target corresponding to the position measured by said position measuring means.

3. (Original) A magnetic guiding apparatus according to claim 1, wherein said magnetic-flux detection means is mounted on the moving member.

4. (Currently Amended) A magnetic guiding apparatus according to ~~Claim~~ claim 3, wherein demagnetization is performed by moving the electromagnets to the position of the magnetic flux and providing the electromagnets with a current signal by said demagnetization means.

5. (Original) A magnetic guiding apparatus according to claim 1, wherein at least one of the electromagnets is used as said magnetic-flux detection means.

6. (Original) A stage apparatus comprising:  
a magnetic guiding apparatus according to claim 1.

7. (Currently Amended) An exposure apparatus for positioning at least one of a substrate and an original by using a stage apparatus according to claim 6.

8. (Original) A device manufacturing method comprising:  
a step of manufacturing devices by an exposure apparatus according to claim 7.

9. (Currently Amended) A stage apparatus comprising:  
a target having a length extending along a direction;

a moving member guided by said target and movable along the length of said target;

electromagnets provided on said moving member and producing a force between said target and said electromagnets;

a plurality of magnetic flux detection means provided on the moving member for detecting a magnetic flux during movement of the moving member along the length of said target;

position measuring means for measuring a position of the magnetic flux detecting means on said moving member along the length of the target; and

detection means for detecting a position of the magnetic flux peak along the length of the target, based on output of said plurality of magnetic-flux detection means and said position measuring means.

10. (Currently Amended) A stage apparatus according to ~~Claim~~ claim 9, further comprising demagnetization means for reducing the magnetic flux at the detected position of the magnetic flux peak.

11. (Original) A stage apparatus according to claim 10, further comprising a servo positioning system for positioning said moving member, wherein said servo positioning system is off during a reduction in the magnetic flux.

12. (Currently Amended) A demagnetization method for performing demagnetization of a magnetic guide apparatus, which has a moving member along a length of a target, said method comprising the steps of:

detecting a magnetic flux along the length of the target by a plurality of magnetic flux detecting means on the moving member during movement of the moving member along the length of the target;

measuring position of the plurality of magnetic flux detecting means along the length of the target;

detecting a position of magnetic flux peak along the length of the target based on measured position and detected magnetic flux; and

performing demagnetization at the detected position of the magnetic flux peak.

13. (Currently Amended) A magnetic guiding apparatus for guiding a moving member along a length of a beam by attracting a target disposed along the length of the beam by electromagnets provided on the moving member, said apparatus comprising:

a plurality magnetic-flux ~~deteeter~~ detectors, on the guided moving member, configured to detect a magnetic flux along the length of the target during movement of the moving member along the length of the target;

a position measuring unit configured to measure a position of said plurality of magnetic-flux ~~deteeter~~ detectors along the length of the target;

detection means for detecting a position of a magnetic flux peak along the length of the target, based on output of said plurality of magnetic-flux ~~deteeter~~ detectors and said position measuring means; and

demagnetization means for performing demagnetization at the detected position of the magnetic flux peak.